

SFOBB West Span BPM Path

Preliminary Engineering &
Environmental Constraints

Caltrans D4 Joint PAD & BAC Mtg.

Caltrans District 4
Oakland, CA
January 24, 2018

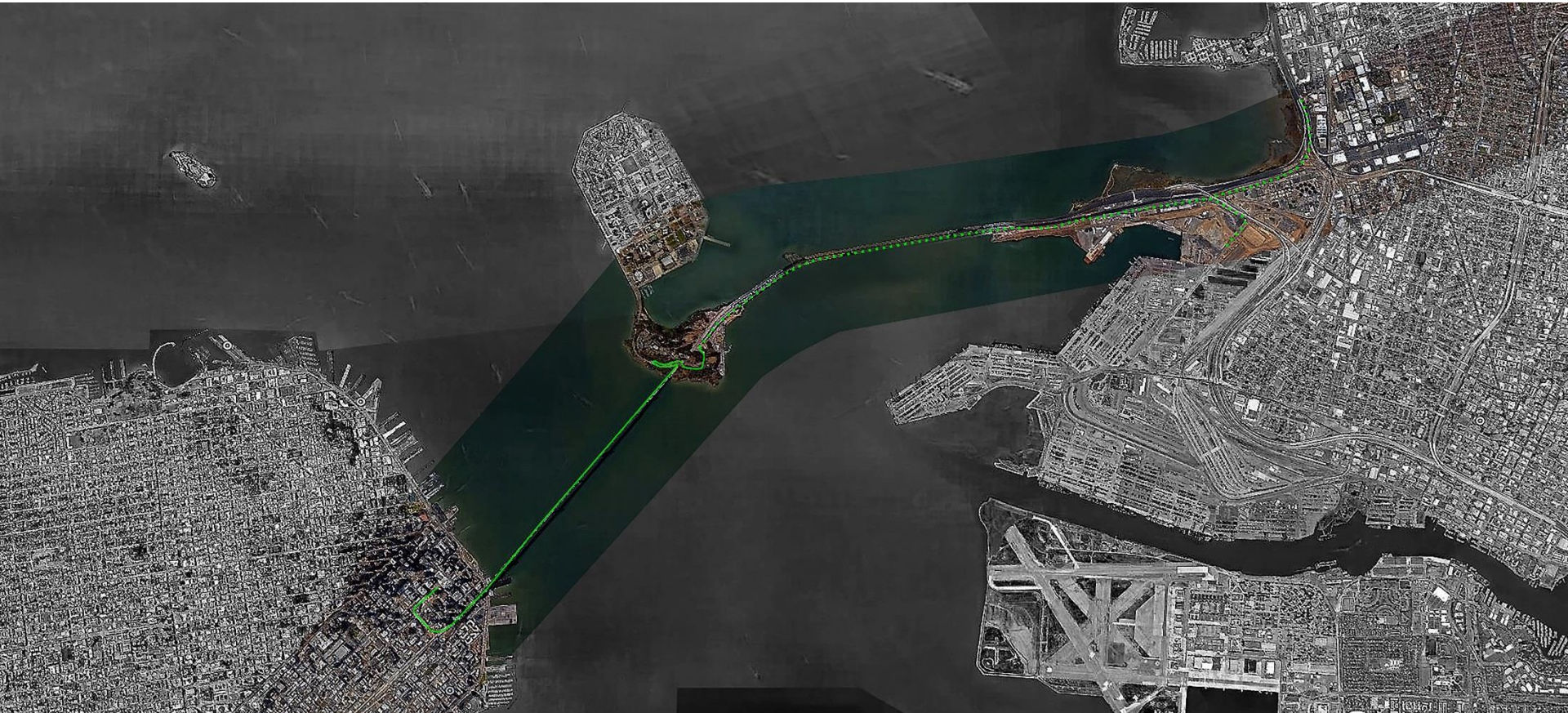


SFOBB WEST SPAN BPM PATH PROJECT UPDATE



Project Description

- San Francisco touchdown ~2500 feet or ½ mile
- Main Span 10,000 feet or ~ 2 miles
- YBI touchdown and path ~ ½ mile



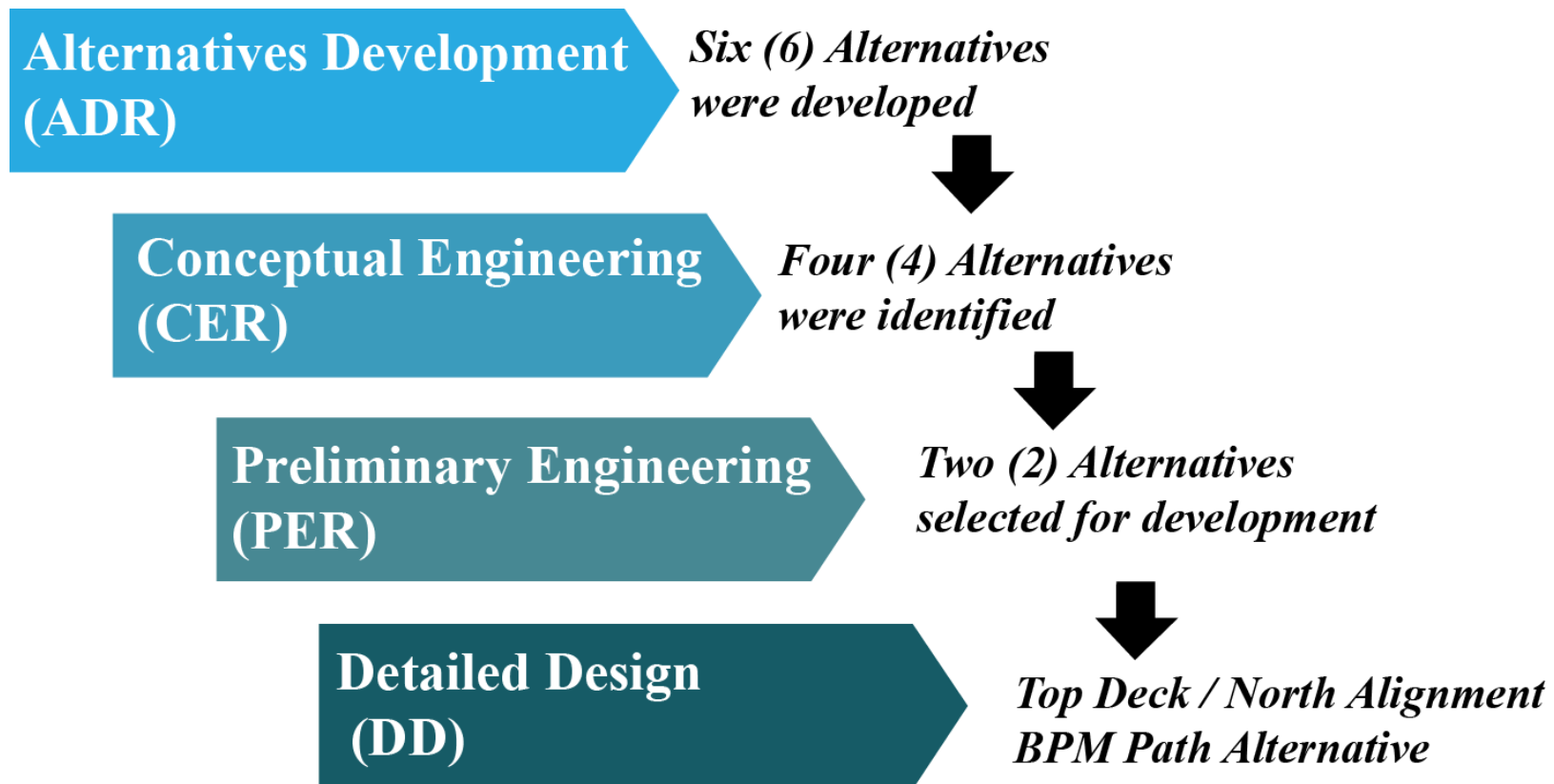
Pathway Alternatives



Path Alternatives & Recommendations



Project design alternatives were developed and evaluated in three (3) phases.



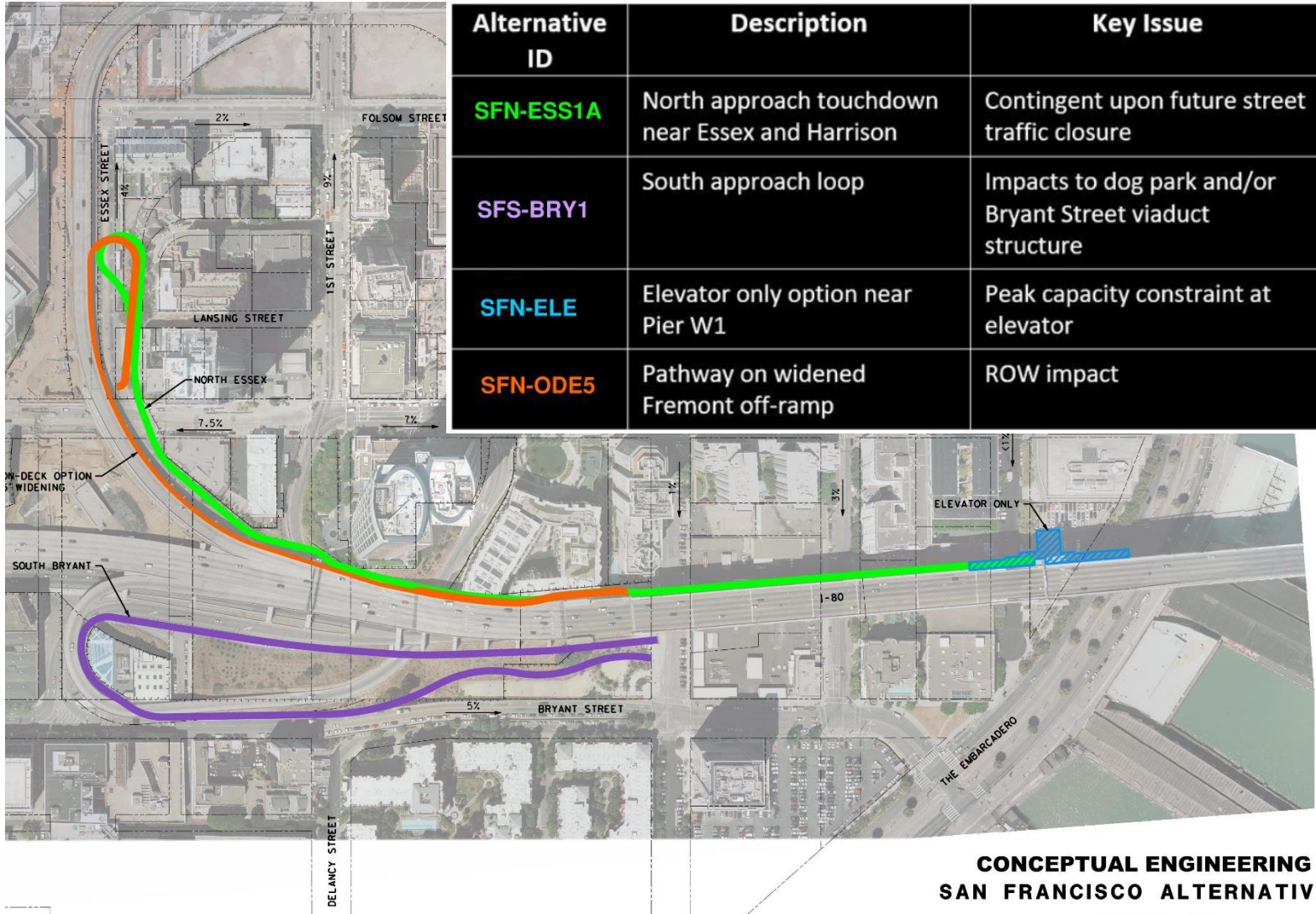
San Francisco Landing Alternatives

Conceptual Engineering (CE) to Preliminary Engineering (PE) Phases



San Francisco Approaches

Conceptual Engineering (CE) Alternatives



**CONCEPTUAL ENGINEERING
SAN FRANCISCO ALTERNATIVES**

San Francisco Approaches

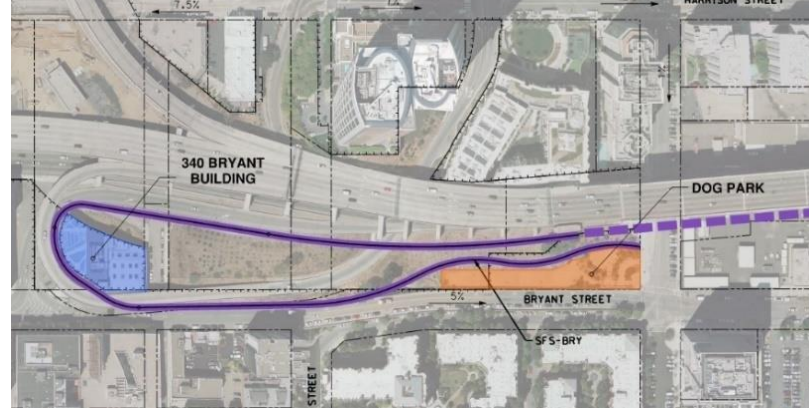
Conceptual Engineering (CE) Alternatives



Essex Street (SFN-ESS1A)



South Bryant Option (SFS-BRY1)



On-Deck Essex Hybrid (SFN-ODE5)



Elevator Option(SFN-ELE)



San Francisco Approaches

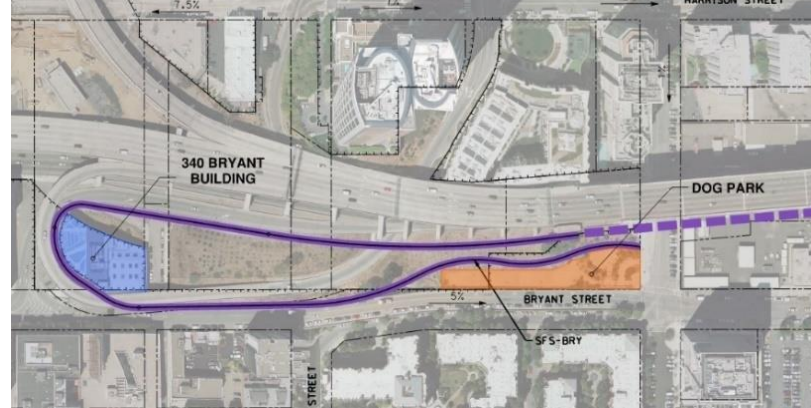
Alternatives Further Evaluated



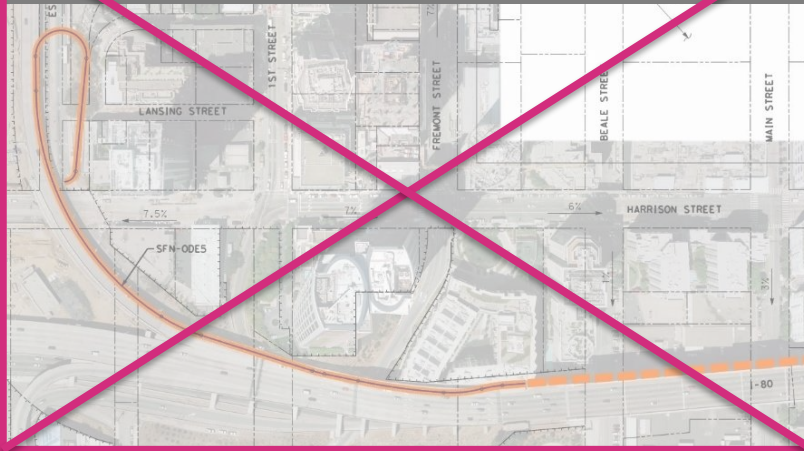
Essex Street (SFN-ESS1A)



South Bryant Option (SFS-BRY1)



On-Deck Essex Hybrid (SFN-ODE5)



Elevator Option(SFN-ELE)



San Francisco North Approach

Essex St. - Recommended



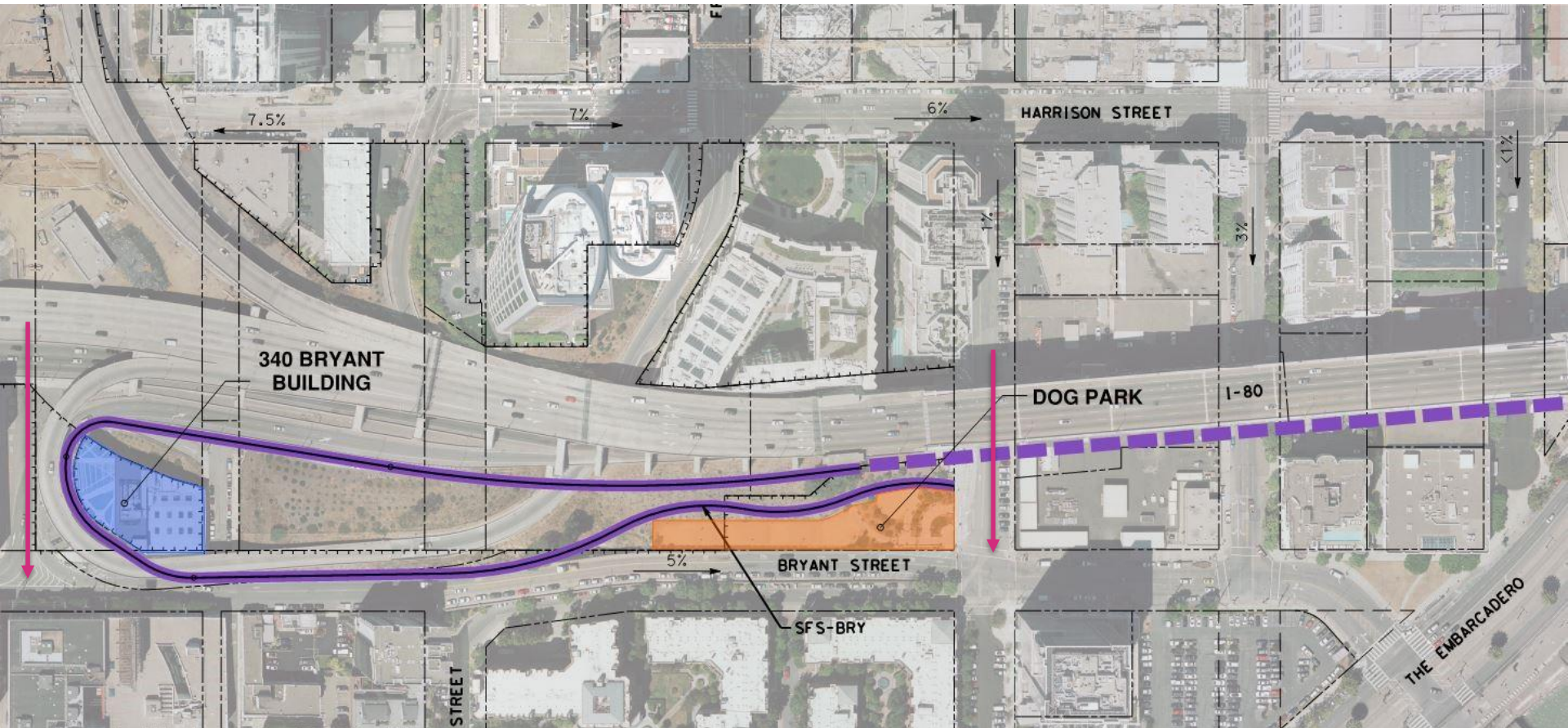
Essex Street Landing



Pathway approach on Essex St.



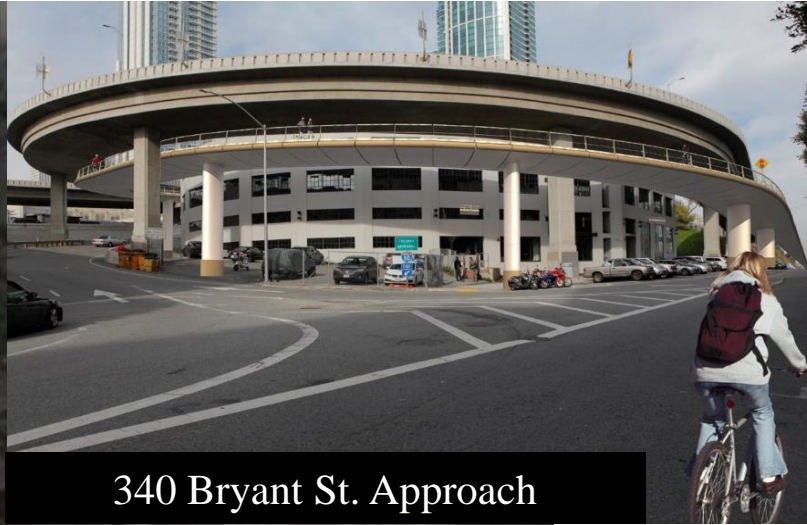
Bryant St. Landing



Bryant Street Landing



Bryant St. Landing



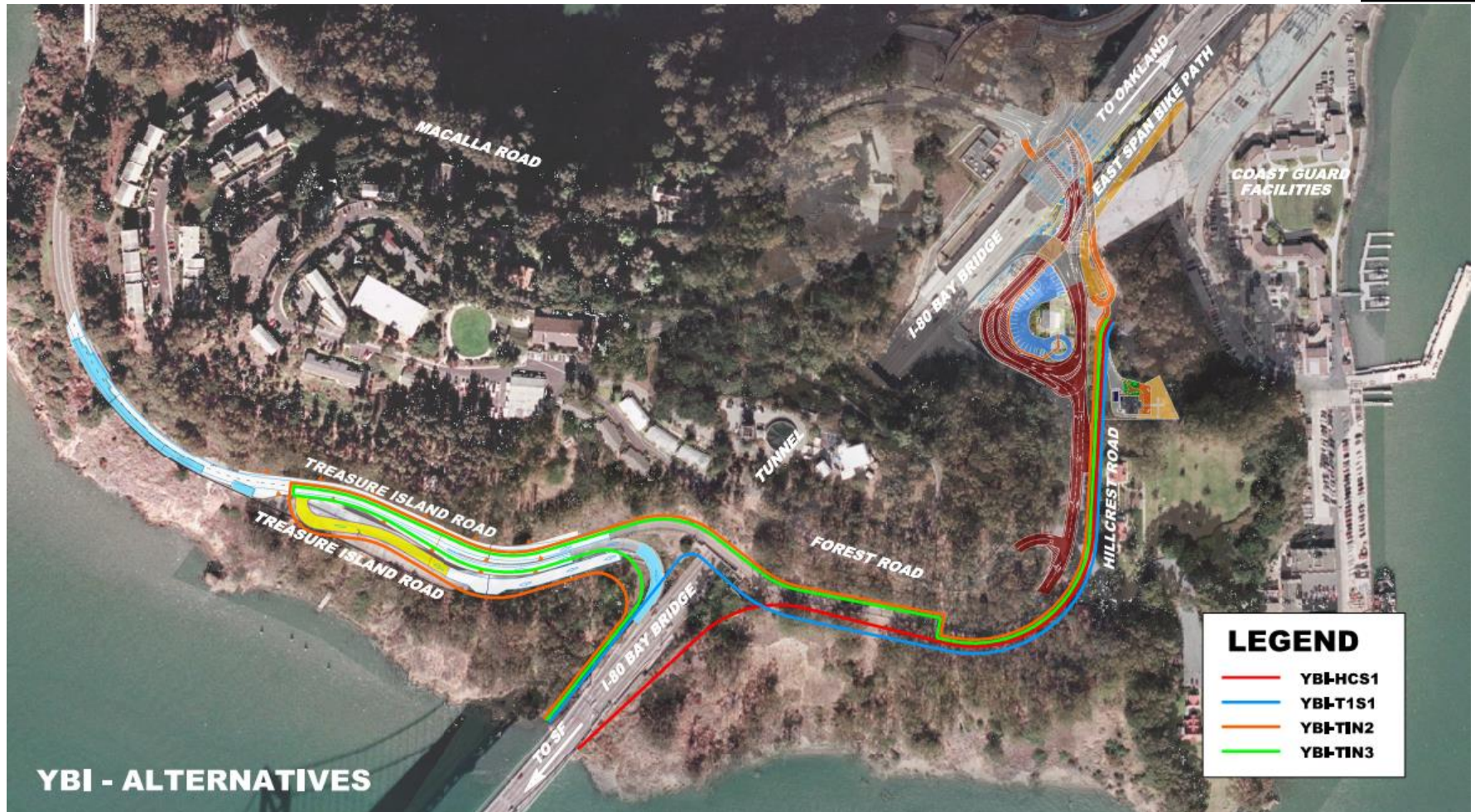
340 Bryant St. Approach

Yerba Buena Island Alternatives



YBI Alternatives

Conceptual Engineering (CE) Alternatives



YBI Alternatives

Preliminary Engineering Alternatives

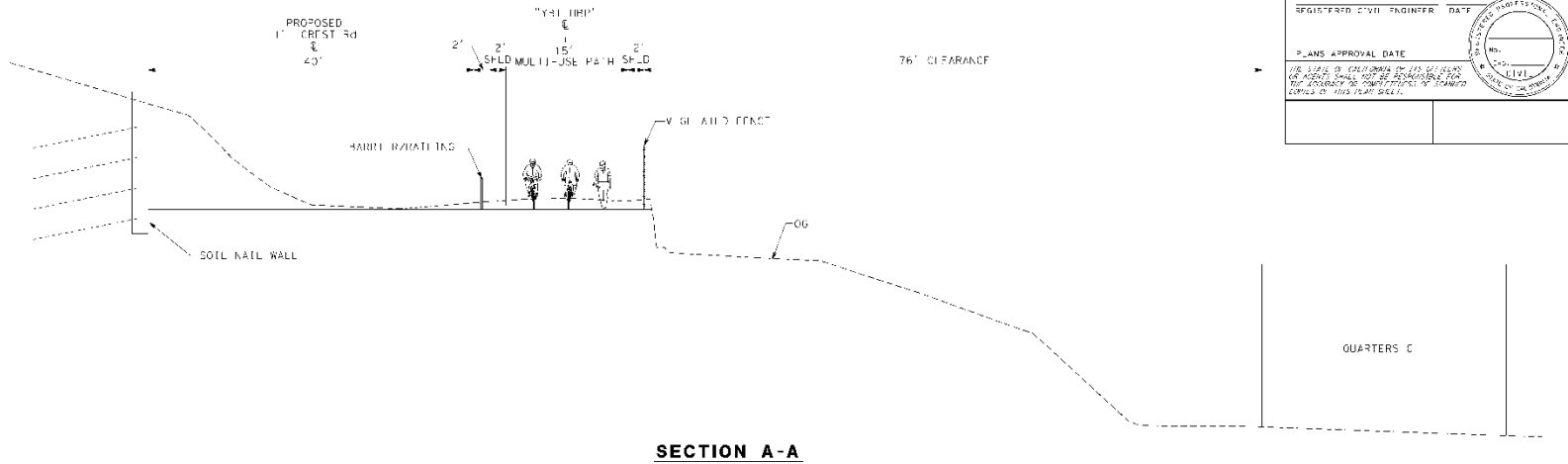


- ADA compliant mix-used path
- Adjacent to Hillcrest Road R/W – no impact to Hillcrest Road and Southgate Project
- Mixed-used path on south side of Hillcrest to avoid crossings
- Possible encroachment into USCG R/W
- Options connecting to the North or South side of West Span

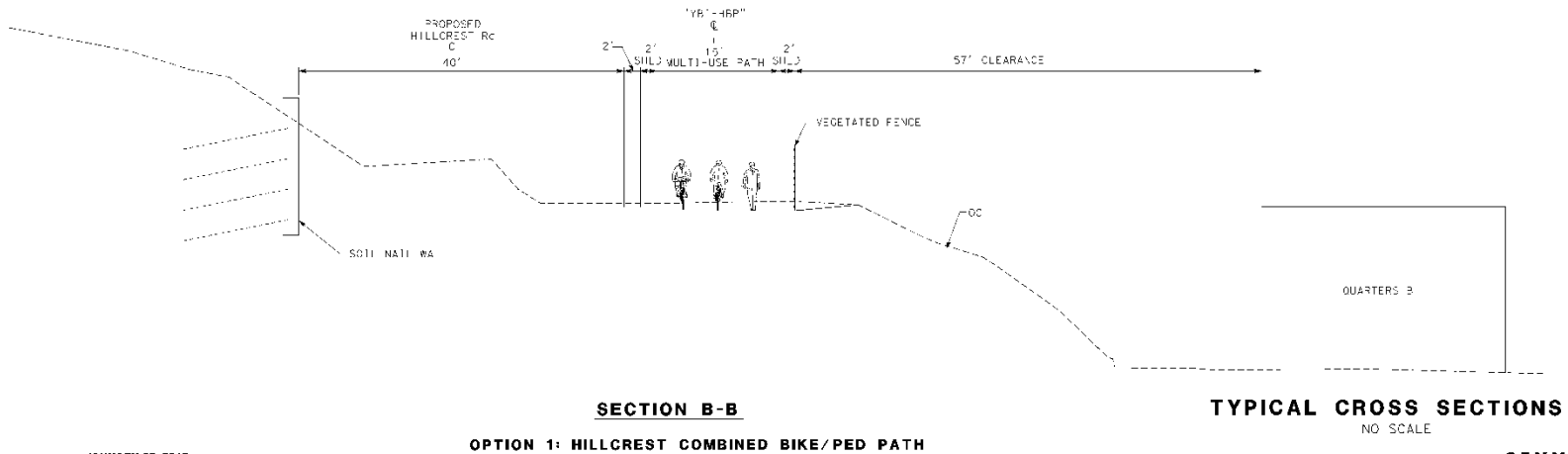
**WEST SPAN
PATHWAY**

15XX

YBI- Combined Bike/Ped Path



REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	
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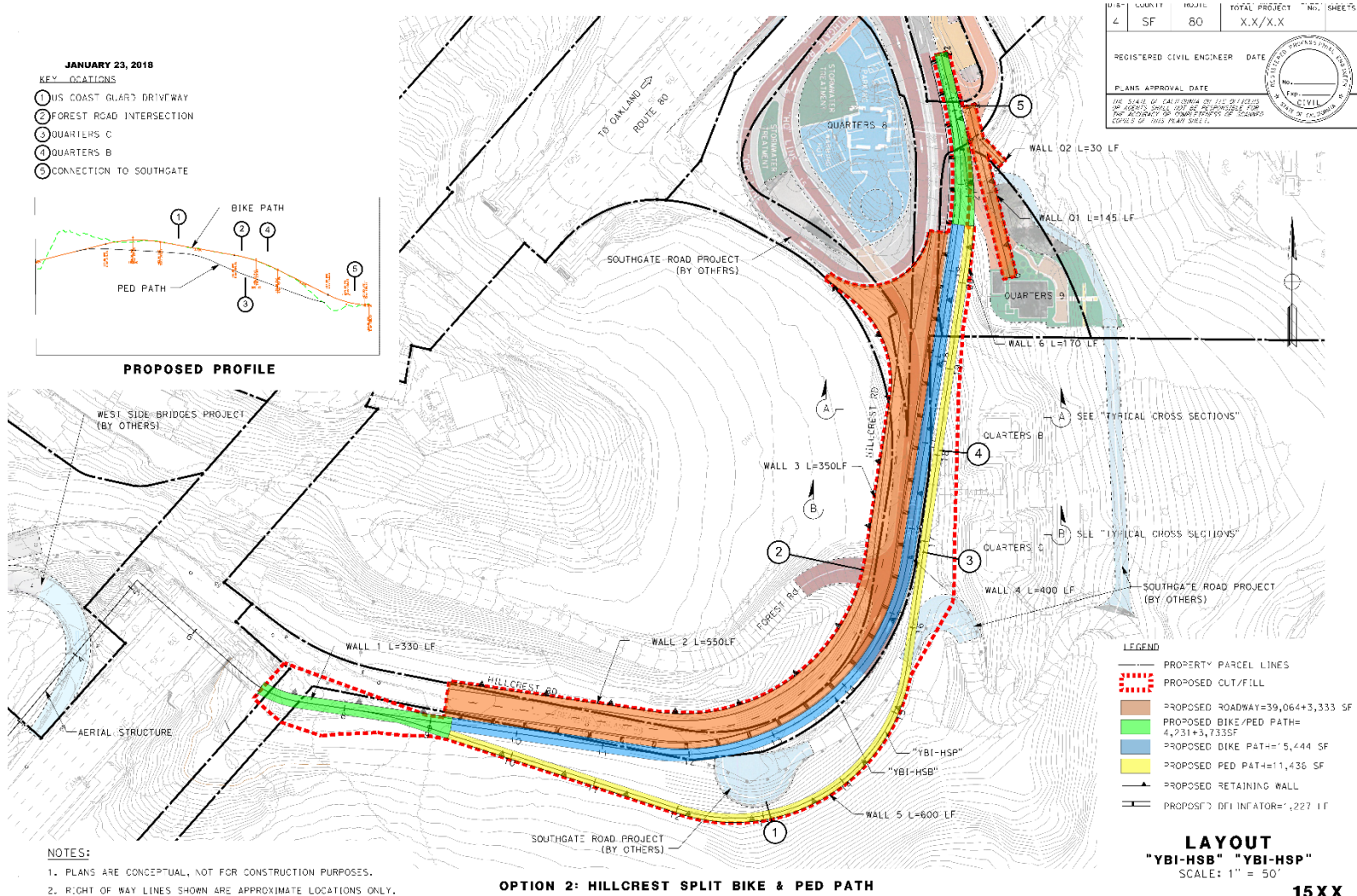


JANUARY 23, 2018

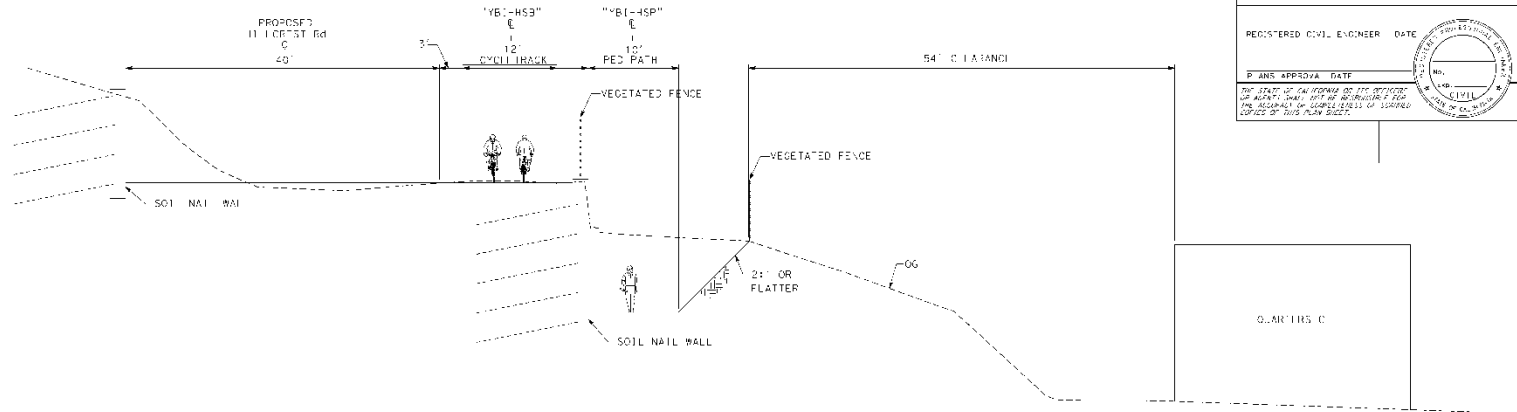
OPTION 1: HILLCREST COMBINED BIKE/PED PATH

35XX

YBI –Split Bike/Ped Path

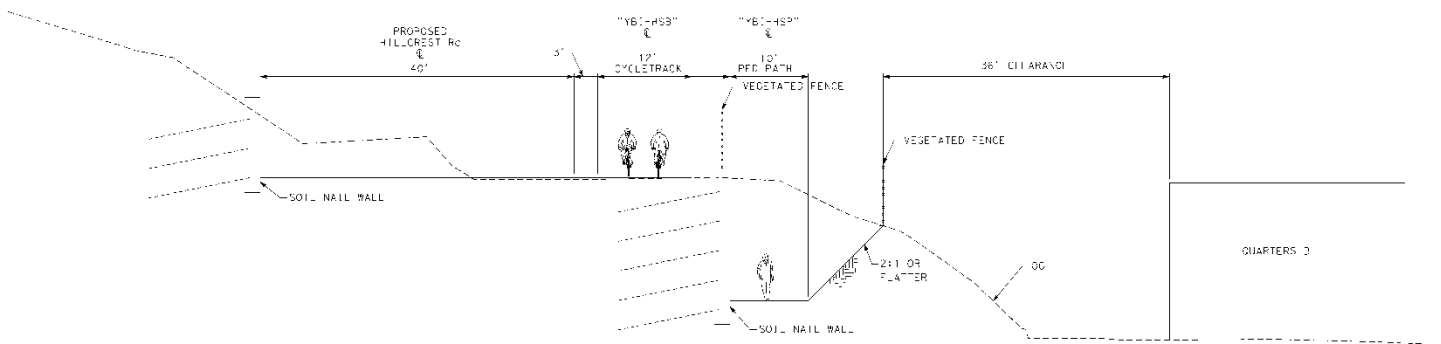


YBI – Split Bike/Ped Path



SIS	COUNTY	ROUTE	POST MILES	PROJECT	DATE
4	SB	50	X, X, X, X		
REGISTERED CIVIL ENGINEER DATE					
PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.					

SECTION A-A



SECTION B-B

TYPICAL CROSS SECTIONS
NO SCALE

JANUARY 23, 2018

OPTION 2: HILLCREST SPLIT BIKE & PED PATH

35XX

YBI – Direct to Main Span North

PER Selected Alternative – (YBI-TIS1)



YBI – Direct to Main Span North

Preliminary Engineering Selected Alternative



**WEST SPAN
PATHWAY**



YBI – Direct to Main Span South

PER Selected Alternative – (YBI-HCS1)



Main Span Options

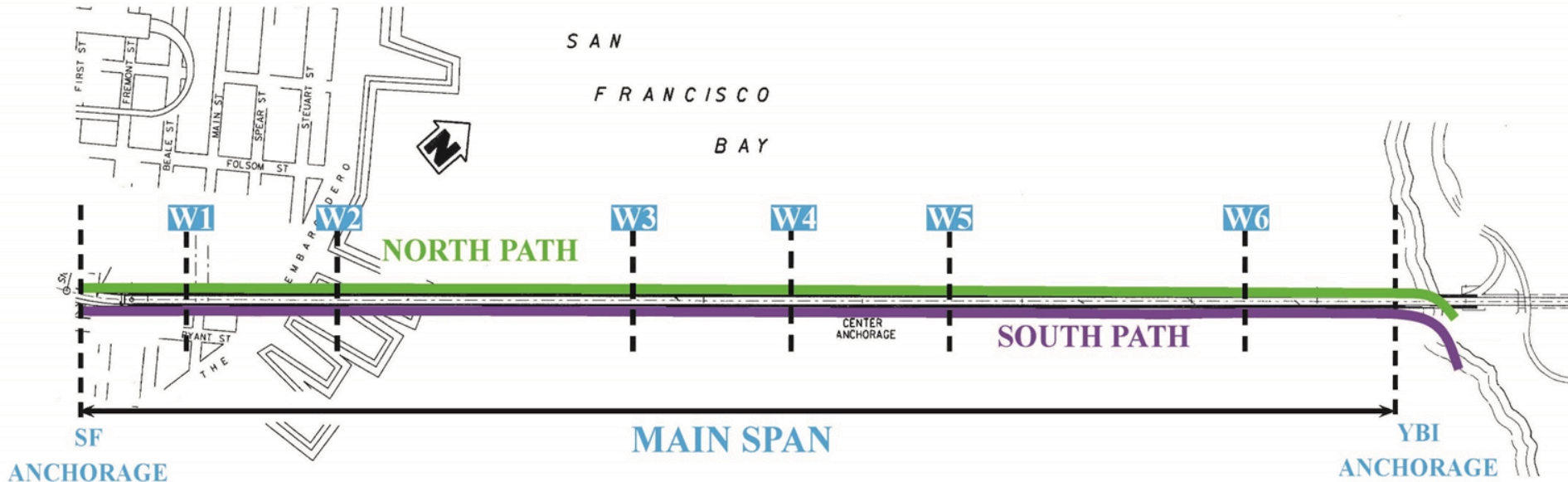


Main Span – North / South

PER Selected Alternatives – End to End Alignments



SF	MS	YBI
SFN-ESS1A	North Cantilever	TSI1 Approach
Essex St.	North Boomerang	Direct to Main Span



SF	MS	YBI
SFN-ESS1A	South Cantilever	HCS1 Approach
Bryant St.	South Boomerang	Direct to Main Span

Main Span Alternatives

CER



Cantilever (Moment Connection)



Long Propped Cantilever (MS-1)



Boomerang (Pinned Connection)



Outboard Deck using Existing Cable



Main Span Alternatives

Preliminary Engineering



Cantilever (Moment Connection)



Boomerang (Pinned Connection)



Long Propped Cantilever (MS-1)



Outboard Deck using Existing Cable



Cantilever (Moment Connection)

(MS-3)



Boomerang (Pinned Connection)

Recommended Design

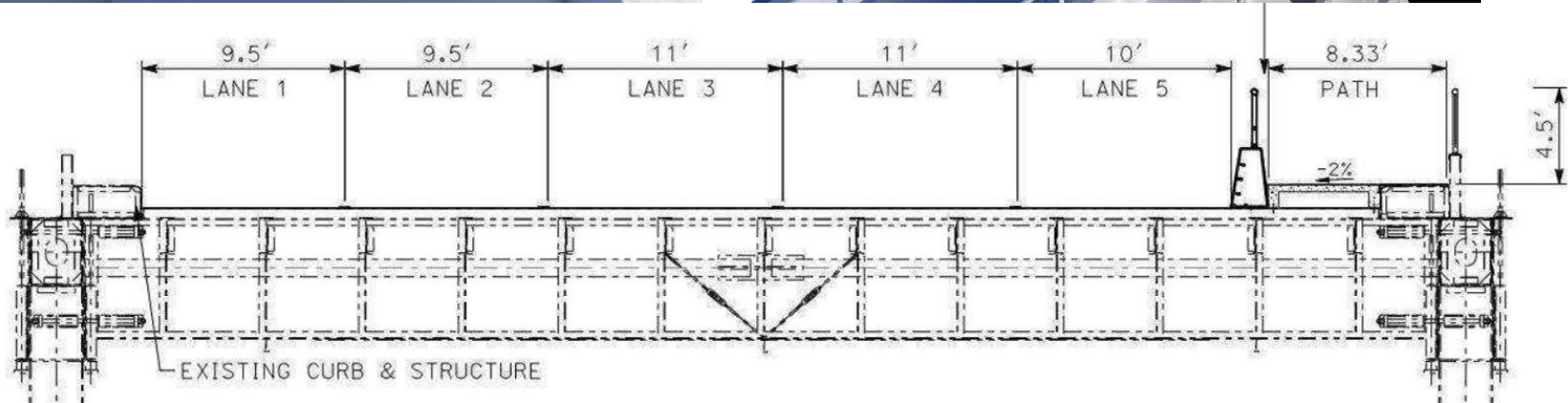
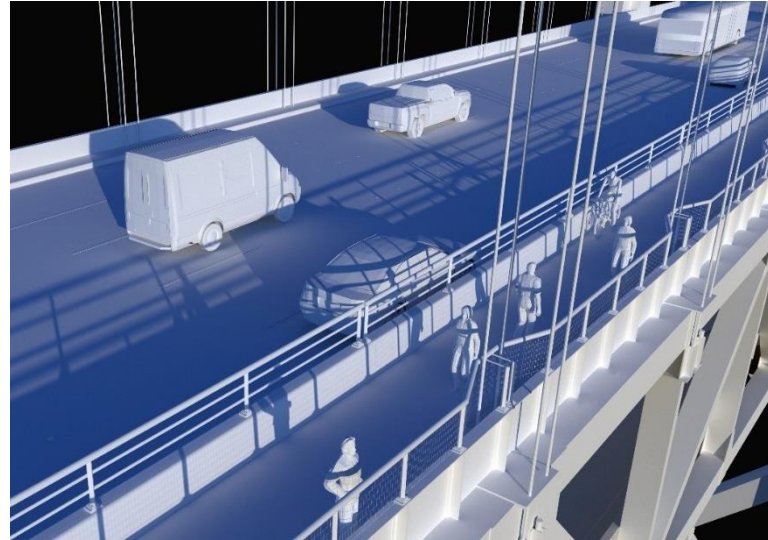
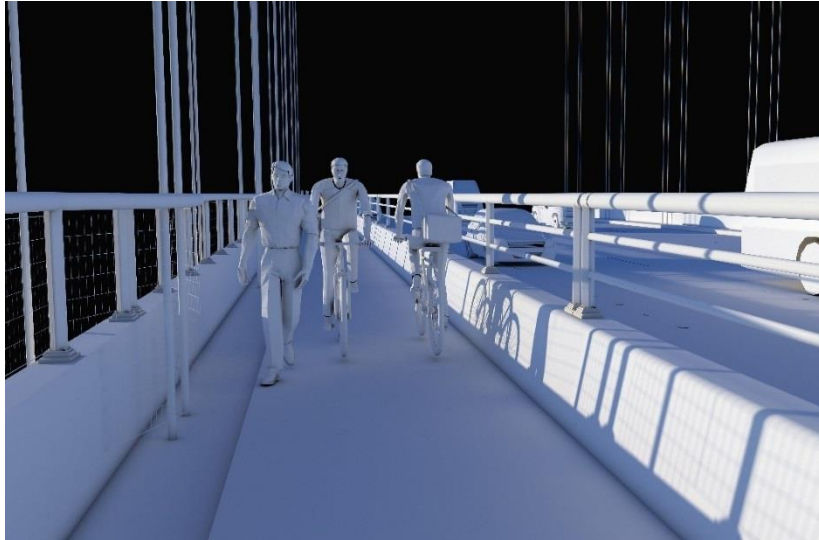


On-Deck Alternatives



On-Deck Alternative

Preliminary Engineering Alternative – On-Deck (5-Lane)



On-Deck Typical Section

On-Deck Alternative

San Francisco Connection via Fremont Ramp

On-Deck San Francisco Connection at Fremont Street

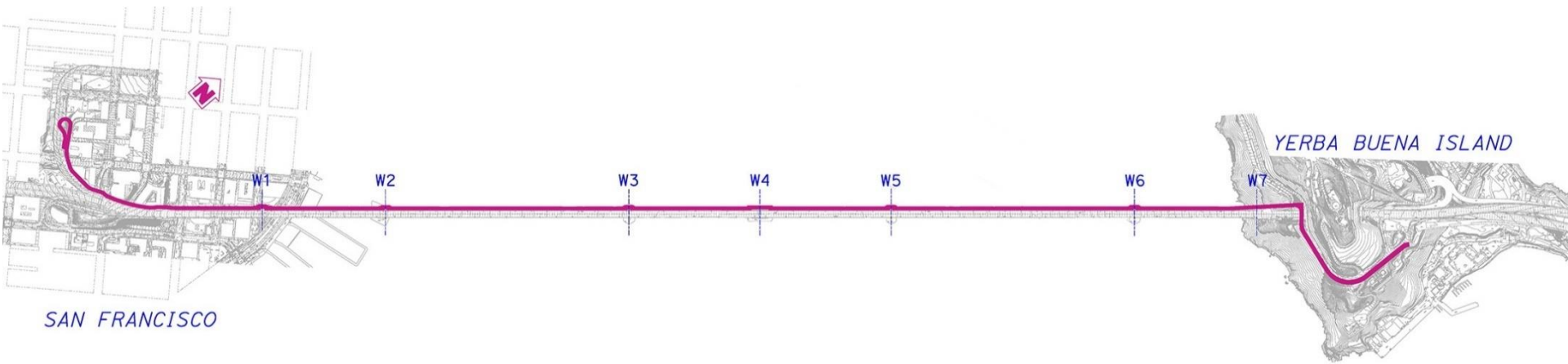


Recommended Alternative



Recommended Design Alternative

- Yerba Buena Island – separate bike/ped until curve, then merge to shared use path before connection to Main Span
- Main Span – North side, pinned boomerang option
- San Francisco – Essex Street landing



Preliminary Engineering Cost Estimate



Cost Estimate

Preliminary Engineering



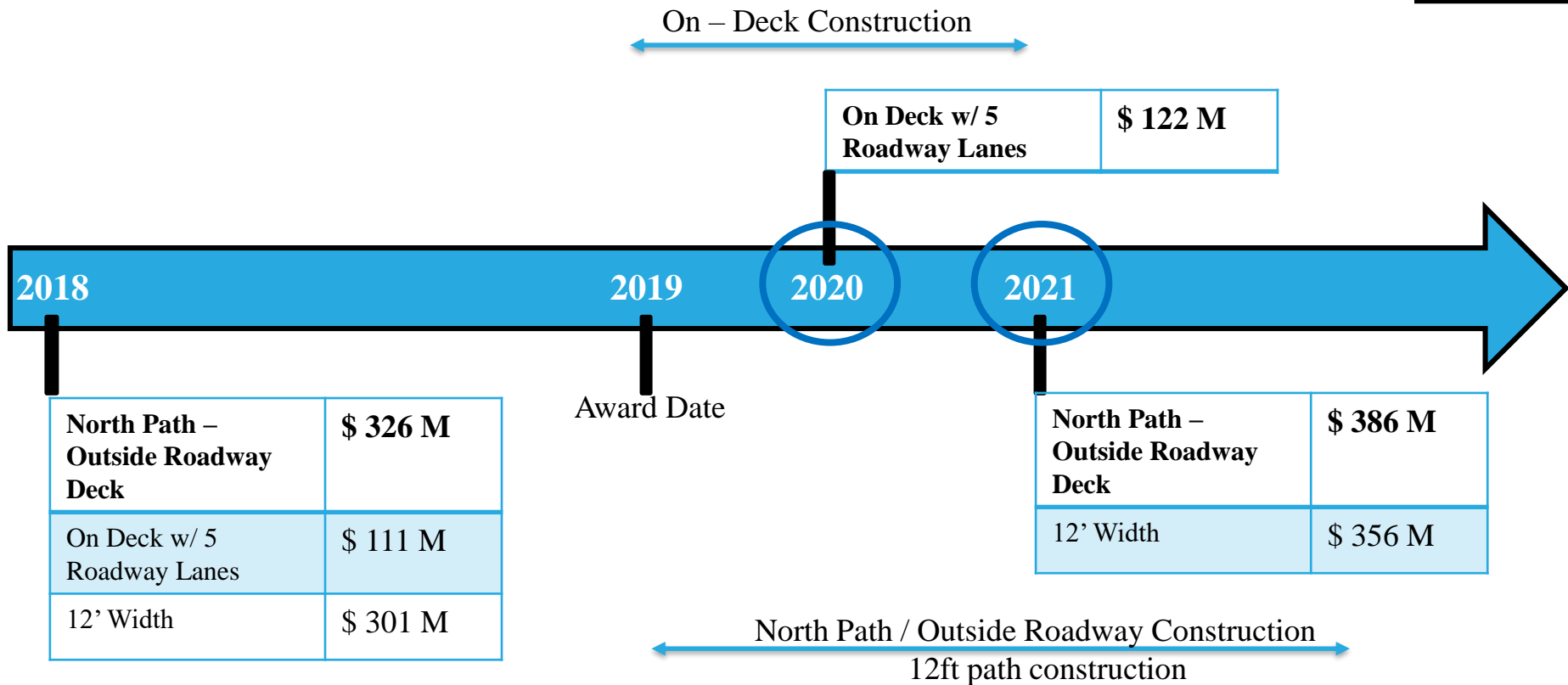
BPM Path Alternatives	Description	Cost Estimates (year 2018)
North Path - Outside Roadway Deck	Essex St. landing (ESS1) – Pinned Boomerang- Hillcrest to North side (TIS1)	\$ 326 M
On Deck w/ 5 Roadway Lanes	Fremont ramp – On-Deck 5 Lane- Hillcrest road to upper deck on- ramp	\$ 111 M
12' Width	North 12' on main span	\$ 301 M

Notes:

1. Including 3.5% annual escalation to the mid point of construction (2021 for PE Options; 2020 for on deck)
2. Not including Extended Railing Protection \$8M
3. Not including Suspender Cable Jacking; \$40M
4. Estimates Nov. 30, 2017

Cost Estimate

Preliminary Engineering



SFOBB WS BPM Path